What we claim:

1. System, consisting of

a) at least one wireless data receiver, capable of receiving data from a plurality of mobile transmitters equipped with a Global Positioning System based locator circuitry, where said data shall include at least the transmitter ID code, the sign-on code, the location parameter, and optionally a routing code, and

b) at least one transmitter, capable of transmitting to a subscriber's receiver routing instructions and traffic density data, and

c) computational means, capable of

i) analyzing and temporarily storing said subscriber identification code, location parameters, and optional sign on code,

ii) pinging a subscriber's mobile transmitter in intervals of n seconds to obtain updated location parameters,

iii) extracting from the difference of the original or previous location parameter and the updated location parameter the speed and direction of a subscriber's mobile transmitter,

iv) assigning the directional and velocity data derived from steps ii and iii to a segment characterized by two nodes, i.e. Node $Long^1/Lat^1$ and Node $Long^2/Lat^2$,

v) comparing said directional and velocity data with directional and velocity data of other subscribers in the same segment,

vi) calculating from a multitude of subscriber data, optionally utilizing fuzzy logic algorithms, the average speed within that segment, or in lanes within that segment,

vii) storing the average speed together with directional and optional lane parameters in a segment record for further update and for subscriber routing requests;

viii) looping to ii,

and method for supplying Routing Instructions to Subscribers upon request (opt-in), consisting of

d) analyzing a subscriber requestor's identification code, authorization, location parameters, and optional routing code (for example *5 for work to home routing),

e) associating said routing code to a previously stored subscriber specific matrix of preferred and potential routes (for example work to home related main choice and alternatives), said matrix constraining the number of possible route segments to subscriber selected options within a grid beginning at node XY^1 and ending at node XY^2 (Fig. 2),

f) selecting said matrix, consisting of potential routes, associated with the routing code transmitted by the subscriber, from a multitude of stored matrices,

g) analyzing and selecting maximum flow conditions by applying Ford-Fulkerson, Dijkstra or similar algorithms across the matrix,

h) selecting the route meeting the maximum flow condition,

i) and transmitting to a subscriber associated routing instructions as derived from the maximum flow analysis optionally by cell phone, LAN, WAN, or the Internet.

2. System, consisting of

a) at least one wireless data receiver, capable of receiving data from a plurality of mobile transmitters equipped with a Global Positioning System based locator circuitry, where said data shall include at least the transmitter ID code, the sign-on code, the location parameter, and an optional routing code, and

b) at least one transmitter, or other device, capable of transmitting to a subscriber's receiver, or a subscriber's reception device, including a computer or PDA, routing instructions and traffic density data, and

c) computational means, capable of

i) analyzing and temporarily storing said subscriber identification code, sign on code, and location parameters,

ii) encrypting said identification code,

iii) pinging a subscriber's mobile transmitter in intervals of n seconds to obtain updated location parameters,

iv) retrieving from a data repository previously stored subscriber data,

v) comparing the subscriber position in the previous record with the current subscriber position,

vi) extracting from the difference of the original or previous location parameter, the updated location parameter, and the time elapsed between two measurements the speed and direction of a subscriber's mobile transmitter,

vii) assigning directional, velocity data, derived from steps iii through vi, and optional lane specific information, to a segment in a geographic grid, and storing said segment data in a repository, structured by segments, each segment representing a route segment determined by two longitude/latitude points,

viii) comparing said directional and velocity data with directional and velocity data of other subscribers in the same segment,

ix) calculating from a multitude of subscriber data the average speed for each direction within that segment, or within lanes within that segment,

x) storing the average velocity related to lane or lanes within a segment together with directional parameters in a segment record for further update and for subscriber routing requests,

xi) discarding previous subscriber related data upon completion of the velocity analysis, and storing in encrypted form current subscriber related data until the next computational cycle is executed,

xii) automatically determining and optionally changing the encryption schema in n intervals,

xiii) looping to ii),

and method for supplying Routing Instructions to Subscribers upon request (opt-in), consisting of

j) analyzing a subscriber requestor's identification code, location parameters, and optional routing code (for example *5 for work to home routing), if any,

k) associating said routing code to a previously stored subscriber specific matrix of preferred and potential alternative routes (for example work to home related main choice and alternatives),

l) optionally, where no routing code has been transmitted, selecting a default matrix based upon subscriber's current location and direction,

m) selecting said matrix, consisting of preferred and potential alternative routes, associated with the routing code transmitted by the subscriber,

n) analyzing and selecting maximum flow conditions by applying Ford-Fulkerson, Dijkstra, or similar algorithms across the matrix,

o) selecting the route meeting the maximum flow condition, and

p) transmitting to a subscriber associated routing instructions as derived from the maximum flow analysis.

3. System as set forth in claims 1 or 2 and Method for supplying Routing Instructions to Subscribers upon request (opt-in), said request containing minimum flow condition parameters, consisting of

a) analyzing a subscriber requestor's identification code, location parameters, minimum flow instruction, and current directions,

b) analyzing traffic flow data of segments in the probable route of the subscriber from previously analyzed traffic data,

and submitting traffic alerts to a subscriber if the traffic flow patterns in segments on the probable route of the subscriber indicate that the expected velocity will be below the preselected minimum speed.

4. A system and method for supplying Routing Instructions to Subscribers upon request (opt-in) as set forth in claims 1 through 3, incorporating at least one data repository consisting of structured records, each records representing routing segments, and containing at least

i) the beginning point of said segment expressed as longitude and latitude,

ii) the endpoint of said segment expressed as longitude and latitude,

iii) one data field for the segment direction, for example North, South, East, West,

iv) one data field for the opposite segment direction,

v) one data field for the average velocity measured in one direction of the segment,

vi) optionally one data field each for the average velocity measured in the lane or lanes of the segment in one direction,

vii) one data field for the average velocity measured in the opposite direction of the segment, and

viii) optionally one data field each for the average velocity measured in the lane or lanes of the segment in the opposite direction.

5. A system and method for supplying Routing Instructions to Subscribers upon request (opt-in) as set forth in claims 1 through 4, in which the structure of a record is incorporated in a single n-Bit word containing a composite of at least

i) the beginning point of said segment expressed as longitude and latitude,

ii) the endpoint of said segment expressed as longitude and latitude,

iii) a Bezier descriptor of the segment,

iv) one data field for the geographic direction of the segment, for example NS for North South

v) one data field for the average velocity measured in one direction of the segment,

vi) optionally one data field each for the average velocity measured in the lane or lanes of the segment in one direction,

vii) one data field for the average velocity measured in the opposite direction of the segment, and

viii) optionally one data field each for the average velocity measured in the lane or lanes of the segment in the opposite direction.

6. A system and method for supplying Routing Instructions to Subscribers upon request (opt-in) as set forth in claims 1 through 5, in which the structure of a record is incorporated in a single n-Bit word containing a composite of at least

ix) the beginning point of said segment expressed as longitude and latitude,

x) the endpoint of said segment expressed as longitude and latitude,

xi) a Bezier descriptor of the segment,

xii) one data field for the geographic direction of the segment, for example NS for North South

xiii) one data field for the average velocity measured in one direction of the segment,

xiv) one data field for the average velocity measured in the opposite direction of the segment,

xv) one data field for the average speed of the said segment in one direction during the month

xvi) one data field for the average speed of the said segment in the opposite direction during the month

xvii) one data field for the average speed of the said segment in one direction during the year

xviii) one data field for the average speed of the said segment in the opposite direction during the year

7. A method for supplying Routing Instructions, as set forth in claims 1 through 6, wherein the level of maximum flow is described as one of n levels, whereby 0 is the level with the least traffic, equivalent to the highest velocity measured, and n is the level with the highest traffic density, equivalent to the lowest measured velocity.

8. A method for supplying Routing Instructions, as set forth in claims 1 through 7, wherein at least one matrix of segments representing preferred routes and its alternatives, selected by a subscriber, is stored in the system's repository and is made available for maximum flow evaluation and subsequent routing instructions by subscriber selection of a code combination.

9. A system and method for supplying Routing Instructions to Subscribers upon request as set forth in Claims 1 through 8, wherein routing information is submitted through wireless means to a vehicle onboard Global Positioning System Display capable of displaying routing instructions graphically upon

request of the subscriber by changing the color or line thickness of segments displayed on the display console as set forth in their respective flow conditions.

10. A system and method for supplying Routing Instructions to Subscribers upon request as set forth in Claims 1 through 9, wherein traffic routing information, supplied to a subscriber, contain the time, or times required to travel the maximum flow route, and the time required to travel alternative routes.

11. A method for supplying Routing Instructions to Subscribers upon request as set forth in Claims 1 through 10, wherein the time required for calculating the velocity traveled between two locations is derived by

a) recording the time of the check-in in a subscriber linked record,

b) deducting the time of the previous check-in from the time of the current check-in.

12. A system and method as set forth in claims 1 and 2 wherein traffic density and traffic velocity are being measured within a segment or a subsegment ahead of a highway entranceway, whereby the data derived from such measurement is being used to control the length and frequency of the green cycle of a traffic control device used to allow access to the highway through the entranceway.

13. A system and method as set forth in claims 1 and 2 wherein traffic flow, and traffic velocity are being measured within a segment and a subsegment ahead of a highway entranceway, wherein the subsegment is variable in length, and wherein the length of said subsegment is determined by the general traffic conditions, as the average velocity and density of the traffic within the segment or subsegment.

14. A system and method for supplying Routing and Traffic Control Instructions to Subscribers as set forth in Claims 1 through 13, wherein route segments and optionally subsegments are being structured in a data base according to their respective endpoints in Longitude/Latitude format and the shape of the route is described by Bezier curves.

15. A system and method for supplying Routing and Traffic Control Instructions to Subscribers as set forth in Claims 1 through 17, wherein traffic conditions within a subscribed matrix or matrices are being transmitted via LANs, WANs, or the Internet to a subscriber's computer.